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NEWS 3	Oct 27	New Extraction Code PAX now available in Derwent Files
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NEWS 5	Oct 27	Patent Assignee Code Dictionary now available in Derwent Patent Files
NEWS 6	Oct 27	Plasdoc Key Serials Dictionary and Echoing added to Derwent Subscriber Files WPIDS and WPIX
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NEWS 10	Dec 15	2001 STN Pricing
NEWS 11	Dec 17	Merged CEABA-VTB for chemical engineering and biotechnology
NEWS 12	Dec 17	Corrosion Abstracts on STN
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NEWS 14	Dec 17	The CA Lexicon available in the CAPLUS and CA files
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FILE 'HOME' ENTERED AT 15:55:19 ON 05 MAR 2001

=> file caplus, biosis, caba

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FILE 'CABA' ENTERED AT 15:56:23 ON 05 MAR 2001
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=> s nucleic acid

L1        90610 NUCLEIC ACID

=> s DNA

L2      1165642 DNA

=> s cation##

L3       424377 CATION##

=> s organic

L4       418987 ORGANIC

=> s particle

L5       511317 PARTICLE

=> s molecule

L6       153557 MOLECULE

=> s condens###

L7       154091 CONDENS###

=> compact###

COMPACT### IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s compact###

L8       130201 COMPACT###

=> d his


     (FILE 'HOME' ENTERED AT 15:55:19 ON 05 MAR 2001)

     FILE 'CAPLUS, BIOSIS, CABA' ENTERED AT 15:56:23 ON 05 MAR 2001
L1         90610 S NUCLEIC ACID
L2       1165642 S DNA
L3        424377 S CATION##
L4        418987 S ORGANIC
L5        511317 S PARTICLE
L6        153557 S MOLECULE
L7        154091 S CONDENS###
```

```
L8        130201 S COMPACT###

=> s l4 and l3 and l5

L9          1254 L4 AND L3 AND 15

=> s l4 and l3 and l6

L10          195 L4 AND L3 AND L6

=> s l7 and l1

L11          363 L7 AND L1

=> s l8 and l1

L12          263 L8 AND L1

=> s l7 and l2

L13         4342 L7 AND L2

=> s l8 and l2

L14         3699 L8 AND L2

=> d his


     (FILE 'HOME' ENTERED AT 15:55:19 ON 05 MAR 2001)

     FILE 'CAPLUS, BIOSIS, CABA' ENTERED AT 15:56:23 ON 05 MAR 2001
L1          90610 S NUCLEIC ACID
L2        1165642 S DNA
L3         424377 S CATION##
L4         418987 S ORGANIC
L5         511317 S PARTICLE
L6         153557 S MOLECULE
L7         154091 S CONDENS###
L8         130201 S COMPACT###
L9           1254 S L4 AND L3 AND 15
L10           195 S L4 AND L3 AND L6
L11           363 S L7 AND L1
L12           263 S L8 AND L1
L13          4342 S L7 AND L2
L14          3699 S L8 AND L2

=> s l2 with l9

MISSING OPERATOR L2 WITH
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s l2(w)l9

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L5(W)L33'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L6(W)L34'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L7(W)L35'
L15             6 L2(W) L9

=> d l15
```

L15 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2001 ACS
AN 1990:455424 CAPLUS
DN 113:55424
TI Nucleic acid extraction method using **cationic** detergent in an **organic** solvent for preparation of nucleic acid for hybridization assay
IN Vermeulen, Nicolaas M. J.; Schwartz, Dennis E.
PA Microprobe Corp., USA
SO Eur. Pat. Appl., 13 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 338591	A2	19891025	EP 1989-107273	19890421
EP 338591	A3	19910904		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
JP 02031696	A2	19900201	JP 1989-100361	19890421
JP 2791367	B2	19980827		

PRAI US 1988-184467 19880421
OS MARPAT 113:55424

=> d l15 2-6

L15 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2001 ACS
AN 1968:464554 CAPLUS
DN 69:64554
TI Patterns of specificity in the interacition of **organic cations** with acid mucopolysaccharides
AU Scott, J. E.
CS Univ. of Alabama, Birmingham, Ala., USA
SO Chem. Physiol. Mucopolysaccharides, Proc. Symp., Milan (1968), Volume Date
1965 219-31
CODEN: 20CLA9
DT Journal
LA English

L15 ANSWER 3 OF 6 BIOSIS COPYRIGHT 2001 BIOSIS
AN 2000:61768 BIOSIS
DN PREV200000061768
TI Genetic epidemiology of the carnitine transporter OCTN2 gene in a Japanese
population and phenotypic characterization in Japanese pedigrees with primary systemic carnitine deficiency.
AU Koizumi, Akio (1); Nozaki, Jun-ichi; Ohura, Toshihiro; Kayo, Tsuyoshi; Wada, Yasuhiko; Nezu, Jun-ichi; Ohashi, Rikiya; Tamai, Ikumi; Shoji, Yutaka; Takada, Goro; Kibira, Satoshi; Matsuishi, Toyojiro; Tsuji, Akira
CS (1) Department of Hygiene, Akita University School of Medicine, Akita, 010-8543 Japan
SO Human Molecular Genetics, (Nov., 1999) Vol. 8, No. 12, pp. 2247-2254.
ISSN: 0964-6906.
DT Article
LA English
SL English

L15 ANSWER 4 OF 6 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1996:420059 BIOSIS
DN PREV199699142415
TI Extraction of extracellular polymers from activated sludge using a **cation** exchange resin.

AU Frolund, Bo; Palmgren, Rikke; Keiding, Kristian; Nielsen, Per Halkjaer
CS Environ. Eng. [redacted]., Aalborg Univ., Sohngaardsho[redacted]vej 57, DK-9000 Aalborg Denmark
SO Water Research, (1996) Vol. 30, No. 8, pp. 1749-1758.
ISSN: 0043-1354.
DT Article
LA English

L15 ANSWER 5 OF 6 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1995:461824 BIOSIS
DN PREV199598476124
TI Polyamine-mediated Conformational Perturbations in **DNA** Alter the Binding of estrogen Receptor to Poly(dG-m-5dC).poly(dG-m-5dC) and a Plasmid Containing the Estrogen Response Element.
AU Thomas, Thresia (1); Gallo, Michael A.; Klinge, Carolyn M.; Thomas, T. J.
CS (1) Program Clin. Pharmacol., Clin. Res. Cent., Univ. Med. Dent. New Jersey, Robert Wood Johnson Med. Sch., New Brunswick, NJ 08903 USA
SO Journal of Steroid Biochemistry and Molecular Biology, (1995) Vol. 54, No.
3-4, pp. 89-99.
ISSN: 0960-0760.
DT Article
LA English

L15 ANSWER 6 OF 6 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1983:158038 BIOSIS
DN BA75:8038
TI CONDITIONS WHICH CAUSE RIGHT HANDED TO LEFT HANDED **DNA** CONFORMATIONAL TRANSITIONS EVIDENCE FOR SEVERAL TYPES OF LEFT HANDED **DNA** STRUCTURES IN SOLUTION.
AU ZACHARIAS W; LARSON J E; KLYSIK J; WELLS R D; STIRDIVANT S M
CS UNIV. OF WIS., DEP. OF BIOCHEMISTRY, COLL. OF AGRICULTURAL AND LIFE SCI., MADISON, WIS. 53706.
SO J BIOL CHEM, (1982) 257 (6), 2775-2782.
CODEN: JBCHA3. ISSN: 0021-9258.
FS BA; OLD
LA English

=> d his

(FILE 'HOME' ENTERED AT 15:55:19 ON 05 MAR 2001)

FILE 'CAPLUS, BIOSIS, CABA' ENTERED AT 15:56:23 ON 05 MAR 2001
L1 90610 S NUCLEIC ACID
L2 1165642 S DNA
L3 424377 S CATION##
L4 418987 S ORGANIC
L5 511317 S PARTICLE
L6 153557 S MOLECULE
L7 154091 S CONDENS###
L8 130201 S COMPACT###
L9 1254 S L4 AND L3 AND 15
L10 195 S L4 AND L3 AND L6
L11 363 S L7 AND L1
L12 263 S L8 AND L1
L13 4342 S L7 AND L2
L14 3699 S L8 AND L2
L15 6 S L2(W)L9

=> l4(W)l3

L4(W)L3 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.

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For a list of commands available to you in the current file, enter
"HELP COMMANDS" at [redacted]arrow prompt (=>).

=> s l4(W)l3

L16       2091 L4(W) L3

=> s l4(W)l3(W)l5

L17          0 L4(W) L3(W) L5

=> s l4(W)l3(W)l6

L18          0 L4(W) L3(W) L6

=> s l4 and l3 and l5

L19        399 L4 AND L3 AND L5

=> d his


     (FILE 'HOME' ENTERED AT 15:55:19 ON 05 MAR 2001)

     FILE 'CAPLUS, BIOSIS, CABA' ENTERED AT 15:56:23 ON 05 MAR 2001
L1         90610 S NUCLEIC ACID
L2       1165642 S DNA
L3        424377 S CATION##
L4        418987 S ORGANIC
L5        511317 S PARTICLE
L6        153557 S MOLECULE
L7        154091 S CONDENS###
L8        130201 S COMPACT###
L9          1254 S L4 AND L3 AND 15
L10          195 S L4 AND L3 AND L6
L11          363 S L7 AND L1
L12          263 S L8 AND L1
L13         4342 S L7 AND L2
L14         3699 S L8 AND L2
L15            6 S L2(W)L9
L16         2091 S L4(W)L3
L17            0 S L4(W)L3(W)L5
L18            0 S L4(W)L3(W)L6
L19          399 S L4 AND L3 AND L5

=> s l4 and l3 and l6

L20        195 L4 AND L3 AND L6

=> s l2(P)l19

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L5(P)L73'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L6(P)L74'
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH
FIELD CODE - 'AND' OPERATOR ASSUMED 'L7(P)L75'
L21            3 L2(P) L19

=> d l21 1-3


L21  ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2001 ACS
AN   1996:380861  CAPLUS
DN   125:98085
```

TI Bacteria, colloids and **organic** carbon in groundwater at the Bangombe site, the Oklo area
AU Pedersen, Karsten
CS Lundberg Inst., Goeteborg Univ., Goeteborg, Swed.
SO SKB Tech. Rep. (1996), 96-01, i-xv, 45 pp.
CODEN: STRPEP; ISSN: 0284-3757
DT Report
LA English

L21 ANSWER 2 OF 3 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1998:1140 BIOSIS
DN PREV199800001140
TI Electrophoresis gel media: The state of the art.
AU Righetti, Pier Giorgio (1); Gelfi, Cecilia
CS (1) L.I.T.A., Univ. Milano, Via Fratelli Cervi 93, 20090 Segrate, Milano Italy
SO Journal of Chromatography B, (Oct. 10, 1997) Vol. 699, No. 1-2, pp. 63-75.
ISSN: 0378-4347.
DT General Review
LA English

L21 ANSWER 3 OF 3 BIOSIS COPYRIGHT 2001 BIOSIS
AN 1980:182772 BIOSIS
DN BA69:57768
TI CHROMATIN CONDENSATION POSSIBLE DEHYDRATING AND STABILIZING FACTORS.
AU JERZMANOWSKI A; STARON K; TYNIEC-KROENKE B; TOCZKO K
CS DEP. BIOCHEM., WARSAW UNIV., ZWIRKI I WIGURY 93, 02-089 WARSZAWA, POL.
SO BIOCHIM BIOPHYS ACTA, (1979 (RECD 1980)) 565 (2), 356-364.
CODEN: BBACAQ. ISSN: 0006-3002.
FS BA; OLD
LA English

=> d l21 abs ibib

L21 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2001 ACS
AB This report describes how microorganisms, colloids and org. matter were sampled from groundwater in 1993 and 1994 from six boreholes at the Bangombe site in the Oklo region and subsequently analyzed. The Oklo region contains the only known examples of natural fission reactors and is therefore, perhaps, one of the best known natural analogs for the geol. disposal of radioactive waste. Among many different repository aspects that must be assessed are stability of the waste and the engineered barriers, behavior of the geol. system that hosts the repository, the potential migration of radionuclides in the geosphere as well as the influence of microorganisms, colloids, and org. matter on repository performance. For anal. of microorganisms, **DNA** was extd. from groundwater, amplified and cloned and information available in the ribosomal 16S rRNA gene was used for mapping diversity and distribution of bacteria. The results showed that this site was inhabited by a diversified population of bacteria. Each borehole was dominated by species that did not dominate in any of the other boreholes; a result that probably reflects documented differences in the geochem. environment. Two of the sequences obtained were identified on genus level to represent Acinetobacter and Zoogloea, but most of the 44 sequences found were only distantly related to species in the **DNA** database. The deepest borehole, BAX01 (105 m), had the highest no. of bacteria and also of total org. carbon (TOC). This borehole harbored only Proteobacteria beta group

sequences while sequences related to Proteobacteria beta, gamma and delta groups and Gra[redacted]os. bacteria were found in the[redacted]her four boreholes. Two of the boreholes, BAX02 (34 m) and BAX04 (10 m) had many 16S rRNA gene sequences in common and they also had similar counts of bacteria, content of TOC, pH and equal cond., suggesting a hydraulic connection between them. The colloid sampling at Bangombe was conducted from four boreholes in July 1994 and the analyses comprised: colloids on membrane for SEM (SEM) anal., colloids on membrane for ICP-MS anal., and groundwater samples in bottles for single **particle** anal. The results from the investigations carried out by the 3 anal. procedures were consistent. The colloid concn. in these Na-Mg-Ca-HCO3 type waters of pH 6-7 and slightly neg. Eh was rather low, about 20-100 ppb. This low colloid concn. was a consequence of relative concns. of calcium, magnesium and sodium in the water which reduce colloid concn. because these **cations** act as a colloid cement (aggregation, sticking) in the aquifer. Groundwater samples were collected for anal. of the concn. of org. carbon (TOC), humic substances and metals assocd. with the humic substances. Humic substances and assocd. metals were isolated on a weak anion exchange resin. TOC varied in the range 4-14 mg l-1 in BAX01, BAX02 and BAX03 whereas BAX04 had a TOC of <1.5 mg l-1. The result of the isolation procedure indicated that humic substances comprised only a minor fraction (<3%) of the TOC which is in agreement with results obtained in studies performed with groundwater from granitic bedrock where, however, the TOC in general is only a few mg/l.

ACCESSION NUMBER: 1996:380861 CAPLUS
DOCUMENT NUMBER: 125:98085
TITLE: Bacteria, colloids and **organic** carbon in groundwater at the Bangombe site in the Oklo area
AUTHOR(S): Pedersen, Karsten
CORPORATE SOURCE: Lundberg Inst., Goeteborg Univ., Goeteborg, Swed.
SOURCE: SKB Tech. Rep. (1996), 96-01, i-xv, 45 pp.
CODEN: STRPEP; ISSN: 0284-3757
DOCUMENT TYPE: Report
LANGUAGE: English

=> d l21 3 abs ibib

L21 ANSWER 3 OF 3 BIOSIS COPYRIGHT 2001 BIOSIS
AB The effects of Na+, Mg2+, spermidine and spermine on the dehydration of [eukaryotic] chromatin gel and precipitation of soluble chromatin were compared. Considerable differences were found in the relative ratios within the studied group (Na+, Mg2+, spermidine and spermine) between the ability to dehydrate (1:32:53:67) and to precipitate (1:53:800:2000) chromatin. The dependence of precipitation on initial chromatin concentration suggests that the observed effect as contributed considerably by interparticle aggregation is a relatively good measure of the ability of **cation** to stabilize higher order structures of chromatin through direct crosslinking or induction of hydrophobic associations at selected sites. In contrary to that the method estimating the direct dehydration measures the overall dehydrating effect of a **cation** exerted on the whole chromatin. The in vivo regulation of the degree of overall chromatin hydration should occur through changes in concentration of free small inorganic **cations**. Larger **organic** polycations like polyamines should be mainly involved in stabilization of the higher order chromatin structures. The stabilizing role of large polyanions like RNA has been ruled out. The unwinding of chromatin **DNA** results in considerable chromatin hydration.

ACCESSION NUMBER: 1980:182772 BIOSIS
DOCUMENT NUMBER: BA69:57768
TITLE: CHROMATIN CONDENSATION POSSIBLE DEHYDRATING AND STABILIZING

FACTORS.
AUTHOR(S): [redacted]RZMANOWSKI A; STARON K; TYNIEC[redacted]DENKE B; TOCZKO K
CORPORATE SOURCE: DEP. BIOCHEM., WARSAW UNIV., ZWIRKI I WIGURY 93, 02-089 WARSZAWA, POL.
SOURCE: BIOCHIM BIOPHYS ACTA, (1979 (RECD 1980)) 565 (2), 356-364.
CODEN: BBACAQ. ISSN: 0006-3002.
FILE SEGMENT: BA; OLD
LANGUAGE: English

=> d his

(FILE 'HOME' ENTERED AT 15:55:19 ON 05 MAR 2001)

FILE 'CAPLUS, BIOSIS, CABA' ENTERED AT 15:56:23 ON 05 MAR 2001
L1 90610 S NUCLEIC ACID
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L4 418987 S ORGANIC
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L6 153557 S MOLECULE
L7 154091 S CONDENS###
L8 130201 S COMPACT###
L9 1254 S L4 AND L3 AND 15
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L11 363 S L7 AND L1
L12 263 S L8 AND L1
L13 4342 S L7 AND L2
L14 3699 S L8 AND L2
L15 6 S L2(W)L9
L16 2091 S L4(W)L3
L17 0 S L4(W)L3(W)L5
L18 0 S L4(W)L3(W)L6
L19 399 S L4 AND L3 AND L5
L20 195 S L4 AND L3 AND L6
L21 3 S L2(P)L19

=> s l2 and l9

L22 6 L2 AND L9

=> s l2 and l19

L23 3 L2 AND L19

=> s l2 and l20

L24 7 L2 AND L20

=> d l24 1-7 abs ibib

L24 ANSWER 1 OF 7 BIOSIS COPYRIGHT 2001 BIOSIS
AB Atypical circular dichroism intensity enhancements previously associated with PSI-**DNA** condensates are reported for poly(dG-dC):poly(dG-dC and poly(dA-dT):poly(dA-dT) upon addition to them of a polycationic string salt. Polycationic strings are **organic** species incorporating several **cationic** sites in a linear array through the **molecule**. The effect observed herein with a small **molecule** model system holds promise for elucidation of the structural details associated with PSI-**DNA** condensate formation.
ACCESSION NUMBER: 1999:226425 BIOSIS

DOCUMENT NUMBER: PREV199900226425
TITLE: [redacted]lycations. 5. Inducement of PS[redacted]**NA** circular dichroism signals for duplex deoxyribonucleotide homopolymers by polycationic strings.
AUTHOR(S): Strekas, Thomas C. (1); Engel, Robert; Locknauth, Kishore; Cohen, JaimeLee; Fabian, Jeanne
CORPORATE SOURCE: (1) Department of Chemistry and Biochemistry, Queens College of the City University of New York, Flushing, NY, 11367 USA
SOURCE: Archives of Biochemistry and Biophysics, (April 1, 1999) Vol. 364, No. 1, pp. 129-131.
ISSN: 0003-9861.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English

L24 ANSWER 2 OF 7 BIOSIS COPYRIGHT 2001 BIOSIS
AB Processes of energy transduction were studied in isolated rat liver mitochondria, taken as a possible target for **DNA**-intercalators, which differs from a usual one, associated with nucleic acid metabolism reactions. In the mitochondrial suspension, changes in respiration rates and latent ATPase activity in controlled state were defined in addition to a decrease in respiratory control index (V-2/ V-1) and P/O ratio under the influence of **DNA**-intercalators, benzophenanthridine alkaloid sanguinarine and acridine derivative APhMA. Within the range of examined sanguinarine and APhMA concentrations, the increase in respiration rate and activation of latent ATPase activity of mitochondrial suspension was first determined, with the maxima of these activities at 10-4 M for both the agents. A further increase in sanguinarine and APhMA concentrations caused the inhibition of these reactions. Such dose-dependent shapes, with a maximum for the curves of mitochondrial respiration rate and ATPase activity ("bell-shaped"), are typical for the majority of so far known uncouplers of oxidative phosphorylation in mitochondria. The fall of V-2/V-1 and P/O, under the influence of sanguinarine and APhMA, evidenced for the inhibition of ATP synthesis in mitochondria. The mechanism of uncoupling by sanguinarine and APhMA was supposed to differ from that by protonophores. It has been suggested that the uncoupling of oxidative phosphorylation by sanguinarine and APhMA was associated with the ability of these **organic cations** to neutralize negative charges near the external side of energized Internal mitochondrial membranes. Correlation between the capacity for **DNA** intercalation and that for the energy transfer inhibition in mitochondria of these two agents is presumably based on the importance of positive charges and hydrophobic interactions, both for intercalation into polynucleotide double helices and for negative charges neutralization in energized mitochondrial membranes. Among **DNA** intercalators, so far examined, no agent has been established, which would not disturb the coupling of respiration and phosphorylation in mitochondria. However, there is no strong correlation for the agents between the ability to intercalate into **DNA** double helix and to disturb the energy transfer processes in mitochondria. Sanguinarine, which is more potent, as a **DNA**-intercalator, than APhMA, is weaker than APhMA as an uncoupler of mitochondrial oxidative phosphorylation. For **DNA** -intercalation, the steric conformity between sizes of the intercalator **molecule** and of **DNA** base pairs is of great importance. On the other hand, for mitochondrial energy transfer disturbance, the agent ability to achieve sites of negative charges in the energized inner membranes is more significant.
ACCESSION NUMBER: 1995:535528 BIOSIS
DOCUMENT NUMBER: PREV199598549828
TITLE: Disturbance of energy transduction in rat liver

mitochondria by sanguinarine and APhMA.
AUTHOR(S): [redacted]lyaeva, T. N.; Faddeeva, M. D.[redacted]
CORPORATE SOURCE: Inst. Cytol., Russ. Acad. Sci., St. Petersburg Russia
SOURCE: Tsitologiya, (1995) Vol. 37, No. 3, pp. 237-248.
ISSN: 0041-3771.
DOCUMENT TYPE: Article
LANGUAGE: Russian
SUMMARY LANGUAGE: Russian; English

L24 ANSWER 3 OF 7 BIOSIS COPYRIGHT 2001 BIOSIS
AB o-Phenanthroline (1,10-phenanthroline) is a chemical known to chelate iron and other transition metal ions. This compound was added to solid yeast media to reduce the concentration of biologically available iron. Other essential divalent **cations**, like Zn2+ or Cu2+, which could also be bound, were supplemented. Growth of wild-type yeast strains was totally inhibited at specific concentrations of the chelator. However, several cells containing plasmids of a multicopy vector genomic library of S. cerevisiae could be selected by growth on these media. All of the resistant clones carried a single additional gene, PAR1 on their multicopy plasmids. Plasmid-directed overexpression of PAR1 increased the resistance of transformants to o-phenanthroline and additionally conferred resistance to 1-nitroso-2-naphthol, an iron(III)-binding **molecule** with different coordinating ligands. By supplementing the o-phenanthroline-containing media with several different metal ions, it could be proved that the selection plates really caused a specific iron limitation. These observations clearly demonstrated that the overexpressed PAR1 gene enables the cell to compete with iron-chelating **organic** molecules. PAR1 null mutants, constructed by insertion of the LEU2 gene into the open reading frame, showed a remarkable phenotype: they did not grow on slighly alkaline buffered media (pH > 7) and became hypersensitive to oxidative stress by hydrogen peroxide. Of several heavy metal ions, such as Fe3+, Fe2+, Co2+, Ni2+, Cu2+ and Zn2+, tested for supplementation of the alkaline growth deficiency, only iron, either added in the ferrous or ferric form, was able to restore cellular growth. It can be concluded from the **DNA** sequence that PAR1 encodes a highly acidic protein of 650 residues with mostly hydrophilic character. Some interesting repetitive amino acid motifs, such as (Asp-Asn)4 or Cys-Ser-Glu, may act as metal-binding sites. The possible role of PAR1 is discussed.
ACCESSION NUMBER: 1991:501383 BIOSIS
DOCUMENT NUMBER: BA92:124343
TITLE: IDENTIFICATION AND CHARACTERIZATION OF A SACCHAROMYCES-CEREVISIAE GENE PAR1 CONFERRING RESISTANCE TO IRON CHELATORS.
AUTHOR(S): SCHNELL N; ENTIAN K-D
CORPORATE SOURCE: INSTITUT FUER MIKROBIOLOGIE DER JOHANN WOLFGANG GOETHE-UNIVERSITAET FRANKFURT, THEODOR-STERN-KAI 7, HAUS 75A, W-6000 FRANKFURT/M, GERMANY.
SOURCE: EUR J BIOCHEM, (1991) 200 (2), 487-494.
CODEN: EJBCAI. ISSN: 0014-2956.
FILE SEGMENT: BA; OLD
LANGUAGE: English

L24 ANSWER 4 OF 7 BIOSIS COPYRIGHT 2001 BIOSIS
AB Putrescine, spermidine, and spermine are a group of small **organic cations**, collectively known as polyamines. They are present in all living cells, and their levels are generally increased in tumor cells.

Progesterone receptor is a gene-regulatory protein that plays a major role in gestation and in hormonal responsiveness of breast cancer. We studied the effects of putrescine, spermidine, 2 lower homologues of spermidine, N1- and N1-acetylspermidines, spermine, and N1-acetylspermine on the sedimentation profile and **DNA** binding of progesterone receptor from rabbit uterus. Progesterone receptor, prepared in hypotonic buffer, sedimented at the 7S region of sucrose gradients. In the presence of 1 mM putrescine, a part of the receptor was converted to a 5S form. In the presence of 1 mM spermidine or 0.25 mM spermine, the receptor was completely transformed to the 5S form. The **DNA** binding of the 7S form of progesterone receptor was 7 .+-. 3%. After incubating this receptor with 1 mM putrescine, 1 mM spermidine, or 0.25 mM spermine, its **DNA** binding increased to 16 .+-. 4, 37 .+-. 3, and 44 .+-. 5%, respectively. The structural specificity of polyamines in facilitating the **DNA** binding of progesterone receptor was examined by using two spermidine homologues. The first homologue with one methylene group less than that of spermidine was as effective as spermidine in transforming progesterone receptor. Removal of two methylene groups, however, had a dramatic effect in reducing the efficacy of the resulting **molecule** to the level of putrescine. Taken together, our results show that natural polyamines are capable of modulating the binding of progesterone receptor to **DNA**. Since progesterone receptor is associated with the hormonal responsiveness of human breast cancer, polyamine levels in tumor cells might play an important role in the gene-regulatory function of progesterone receptor.

ACCESSION NUMBER: 1988:204684 BIOSIS
DOCUMENT NUMBER: BA85:106030
TITLE: MODULATION OF THE BINDING OF PROGESTERONE RECEPTOR TO **DNA** BY POLYAMINES.
AUTHOR(S): THOMAS T; KIANG D T
CORPORATE SOURCE: UNIV. MINN., DIV. MED. ONCOL., BOX 168, UMHC, 420 DELAWARE ST. S.E., MINNEAPOLIS, MINN. 55455.
SOURCE: CANCER RES, (1988) 48 (5), 1217-1222.
CODEN: CNREA8. ISSN: 0008-5472.
FILE SEGMENT: BA; OLD
LANGUAGE: English

L24 ANSWER 5 OF 7 BIOSIS COPYRIGHT 2001 BIOSIS
AB The binding of 2 diamino steroids, irehdiamine A and dihydroirehdiamine A, to double-stranded **DNA** [calf thymus] was studied in the presence of various NaCl concentrations up to 0.20 M. The binding is reversible as shown by complete dissociation of the complex observed upon addition of mineral or **organic cations**. The binding equilibrium was studied by preparative ultracentrifugation and parameters relative to the stabilized complex were determined. The binding constant of irehdiamine A decreases as a function of the salt concentration according to the equation: log K = 2.19-1.49 log [NaCl]. The binding constant of dihydroirehdiamine A is slight smaller than that of irehdiamine A. Entropy is the predominant component of the free-energy change of the reaction. The **DNA**-steroid binding constants were measured by analysis of the competition between ethidium and steroids for **DNA** binding. Steroid-induced alterations of the **DNA** UV absorption spectrum were studied: steroids cause a maximum hyperchromicity at 260 nm of the **DNA** of about 18%. Especially at higher ionic strengths, the hyperchromicity is not a linear function of the amount of bound steroid but appears to be induced cooperatively. The superhelical turns of the closed circular **DNA molecule** of phage PM2 are removed for a bound steroid/phosphate ratio of 0.17 in a solvent containing 0.05 M NaCl. This unwinding is presumably due to the opening of 7% of the **DNA** base pairs. Evidence for opening of the **DNA** base

pairs is provided by measurement of the rate of reaction of the bases with formaldehyde in the presence of irehdiamine A. Fast reannealing of the **DNA** denatured in the presence of steroid at high concentration was observed, which suggests the existence of cross-links between the 2 **DNA** strands. The stabilizing site of binding apparently lies in the **DNA** minor groove.

ACCESSION NUMBER: 1978:173707 BIOSIS
DOCUMENT NUMBER: BA65:60707
TITLE: PHYSICOCHEMICAL STUDIES ON THE INTERACTION OF IREHDIAMINE A WITH BI HELICAL **DNA**.
AUTHOR(S): SAUCIER J-M
CORPORATE SOURCE: LAB. PHARMACOL. MOL., INST. GUSTAVE ROUSSY, 94800 VILLEJUIF, FR.
SOURCE: BIOCHEMISTRY, (1977 (RECD 1978)) 16 (26), 5879-5889. CODEN: BICHAW. ISSN: 0006-2960.
FILE SEGMENT: BA; OLD
LANGUAGE: English

L24 ANSWER 6 OF 7 BIOSIS COPYRIGHT 2001 BIOSIS
AB The polyamines influence the activity of many enzymes involved in the synthesis and degradation of RNA. These **organic cations** (putrescine, spermidine, spermine) stimulated, for example, many **DNA**-dependent RNA polymerases and affected both RNA chain elongation and initiation. The polyamines also bound to polynucleotides, forming complexes having, in many cases, physical properties quite distinct from the parent polymer. Some of these complexes were resistent to RNase mediated hydrolysis. Polyamines altered the activity, as well as the specificity of some RNases, so the actual rate of breakdown of RNA was dependent on the interaction of polyamine with both RNA and enzyme. The hydrolytic rate might also be controlled by the presence of purine homopolymer, which acted to strongly inhibit RNase activity. The addition of polyadenylic acid tracts to the 3' terminus of the RNA substrate, for example, protected the unpolyadenylated portion of the RNA **molecule** from degradation. Longer segments of poly(A) were more effective in this respect; however, regardless of poly(A) length, low concentrations of spermidine reversed the inhibition of RNase activity, with concomitant rapid degradation of the unpolyadenylated portion of the RNA **molecule**. RNA degradation depended not only on the presence of RNase, but on poly(A) length and spermidine concentration as well. Although the relative importance, within the cell, of each of these interactions was not known, the above mechanisms illustrated certain of the complexities and interrelations that might exist for the synthesis and, in particular, the RNase mediated degradation of RNA.

ACCESSION NUMBER: 1978:146085 BIOSIS
DOCUMENT NUMBER: BA65:33085
TITLE: POLY AMINES RNASE AND THE STABILITY OF RNA.
AUTHOR(S): KARPETSKY T P; HIETER P A; FRANK J J; LEVY C C
CORPORATE SOURCE: ENZYMOL. DRUG METABOL. SECT., LAB. MOL. BIOL., BALTIMORE CANCER RES. CENT., NATL. HEART LUNG BLOOD INST., BALTIMORE, MD. 21211, USA.
SOURCE: MOL CELL BIOCHEM, (1977) 17 (2), 89-100. CODEN: MCBIB8. ISSN: 0300-8177.
FILE SEGMENT: BA; OLD
LANGUAGE: English

L24 ANSWER 7 OF 7 CABA COPYRIGHT 2001 CABI
AB The nature of **DNA** adsorption on mica, silylated mica, calcite, fluorite, and barite was investigated using atomic force microscopy. Adsorption was improved by the presence of **cations**, either in solution or accessible to the **DNA molecule**. Buffer composition was shown to have only a minor impact on the adsorption of

DNA to silylated mica. It was concluded that **DNA** adsorption was electrostatic in nature.

ACCESSION NUMBER: 95:180095 CABA
DOCUMENT NUMBER: 951909834
TITLE: Adsorption of **DNA** to mica, silylated mica, and minerals: characterization by atomic force microscopy
AUTHOR: Bezanilla, M.; Manne, S.; Laney, D. E.; Lyubchenko, Y. L.; Hansma, H. G.
CORPORATE SOURCE: Department of Physics, University of California, Santa Barbara, CA 93106, USA.
SOURCE: Langmuir, (1995) Vol. 11, No. 2, pp. 655-659. 25 ref.
ISSN: 0743-7463
DOCUMENT TYPE: Journal
LANGUAGE: English

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(FILE 'HOME' ENTERED AT 15:55:19 ON 05 MAR 2001)

FILE 'CAPLUS, BIOSIS, CABA' ENTERED AT 15:56:23 ON 05 MAR 2001

```
L1         90610 S NUCLEIC ACID
L2       1165642 S DNA
L3        424377 S CATION##
L4        418987 S ORGANIC
L5        511317 S PARTICLE
L6        153557 S MOLECULE
L7        154091 S CONDENS###
L8        130201 S COMPACT###
L9          1254 S L4 AND L3 AND 15
L10          195 S L4 AND L3 AND L6
L11          363 S L7 AND L1
L12          263 S L8 AND L1
L13         4342 S L7 AND L2
L14         3699 S L8 AND L2
L15            6 S L2(W)L9
L16         2091 S L4(W)L3
L17            0 S L4(W)L3(W)L5
L18            0 S L4(W)L3(W)L6
L19          399 S L4 AND L3 AND L5
L20          195 S L4 AND L3 AND L6
L21            3 S L2(P)L19
L22            6 S L2 AND L9
L23            3 S L2 AND L19
L24            7 S L2 AND L20

=> s l7 and l2 and l19

L25            0 L7 AND L2 AND L19

=> s l7 and l2 and l20

L26            1 L7 AND L2 AND L20

=> s l8 and l2 and l20

L27            0 L8 AND L2 AND L20

=> s l8 and l2 and l19

L28            0 L8 AND L2 AND L19
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=> d l26 abs ibib

L26 ANSWER 1 OF 1 BIOSIS COPYRIGHT 2001 BIOSIS

AB Atypical circular dichroism intensity enhancements previously associated with PSI-**DNA** condensates are reported for poly(dG-dC):poly(dG-dC and poly(dA-dT):poly(dA-dT) upon addition to them of a polycationic string salt. Polycationic strings are **organic** species incorporating several **cationic** sites in a linear array through the **molecule**. The effect observed herein with a small **molecule** model system holds promise for elucidation of the structural details associated with PSI-**DNA condensate** formation.

ACCESSION NUMBER: 1999:226425 BIOSIS
DOCUMENT NUMBER: PREV199900226425
TITLE: Polycations. 5. Inducement of PSI-**DNA** circular dichroism signals for duplex deoxyribonucleotide homopolymers by polycationic strings.
AUTHOR(S): Strekas, Thomas C. (1); Engel, Robert; Locknauth, Kishore; Cohen, JaimeLee; Fabian, Jeanne
CORPORATE SOURCE: (1) Department of Chemistry and Biochemistry, Queens College of the City University of New York, Flushing, NY, 11367 USA
SOURCE: Archives of Biochemistry and Biophysics, (April 1, 1999) Vol. 364, No. 1, pp. 129-131. ISSN: 0003-9861.
DOCUMENT TYPE: Article
LANGUAGE: English
SUMMARY LANGUAGE: English

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L2	1165642	S	DNA
L3	424377	S	CATION##
L4	418987	S	ORGANIC
L5	511317	S	PARTICLE
L6	153557	S	MOLECULE
L7	154091	S	CONDENS###
L8	130201	S	COMPACT###
L9	1254	S	L4 AND L3 AND 15
L10	195	S	L4 AND L3 AND L6
L11	363	S	L7 AND L1
L12	263	S	L8 AND L1
L13	4342	S	L7 AND L2
L14	3699	S	L8 AND L2
L15	6	S	L2(W)L9
L16	2091	S	L4(W)L3
L17	0	S	L4(W)L3(W)L5
L18	0	S	L4(W)L3(W)L6
L19	399	S	L4 AND L3 AND L5
L20	195	S	L4 AND L3 AND L6
L21	3	S	L2(P)L19
L22	6	S	L2 AND L9
L23	3	S	L2 AND L19
L24	7	S	L2 AND L20
L25	0	S	L7 AND L2 AND L19
L26	1	S	L7 AND L2 AND L20
L27	0	S	L8 AND L2 AND L20
L28	0	S	L8 AND L2 AND L19

=> s l1 and l19

L29 0 L1 AND L19

=> s l1 and l20

L30 1 L1 AND L20

=> s l7 and l1 and l19

L31 0 L7 AND L1 AND L19

=> s l7 and l1 and l20

L32 0 L7 AND L1 AND L20

=> s l8 and l1 and l20

L33 0 L8 AND L1 AND L20

=> s l8 and l1 and l19

L34 0 L8 AND L1 AND L19

=> d l30 abs ibib

L30 ANSWER 1 OF 1 BIOSIS COPYRIGHT 2001 BIOSIS

AB Processes of energy transduction were studied in isolated rat liver mitochondria, taken as a possible target for DNA-intercalators, which differs from a usual one, associated with **nucleic acid** metabolism reactions. In the mitochondrial suspension, changes in respiration rates and latent ATPase activity in controlled state were defined in addition to a decrease in respiratory control index (V-2/ V-1) and P/O ratio under the influence of DNA-intercalators, benzophenanthridine alkaloid sanguinarine and acridine derivative APhMA. Within the range of examined sanguinarine and APhMA concentrations, the increase in respiration rate and activation of latent ATPase activity of mitochondrial suspension was first determined, with the maxima of these activities at 10-4 M for both the agents. A further increase in sanguinarine and APhMA concentrations caused the inhibition of these reactions. Such dose-dependent shapes, with a maximum for the curves of mitochondrial respiration rate and ATPase activity ("bell-shaped"), are typical for the majority of so far known uncouplers of oxidative phosphorylation in mitochondria. The fall of V-2/V-1 and P/O, under the influence of sanguinarine and APhMA, evidenced for the inhibition of ATP synthesis in mitochondria. The mechanism of uncoupling by sanguinarine and APhMA was supposed to differ from that by protonophores. It has been suggested that the uncoupling of oxidative phosphorylation by sanguinarine and APhMA was associated with the ability of these **organic cations** to neutralize negative charges near the external side of energized Internal mitochondrial membranes. Correlation between the capacity for DNA intercalation and that for the energy transfer inhibition in mitochondria of these two agents is presumably based on the importance of positive charges and hydrophobic interactions, both for intercalation into polynucleotide double helices and for negative charges neutralization in energized mitochondrial membranes. Among DNA intercalators, so far examined, no agent has been established, which would not disturb the coupling of respiration and phosphorylation in mitochondria. However, there is no strong correlation for the agents between the ability to

intercalate into DNA double helix and to disturb the energy transfer processes in mitochondria. Sanguinarine, which is more potent, as a DNA-intercalator, than APhMA, is weaker than APhMA as an uncoupler of mitochondrial oxidative phosphorylation. For DNA intercalation, the steric conformity between sizes of the intercalator **molecule** and of DNA base pairs is of great importance. On the other hand, for mitochondrial energy transfer disturbance, the agent ability to achieve sites of negative charges in the energized inner membranes is more significant.

ACCESSION NUMBER: 1995:535528 BIOSIS
DOCUMENT NUMBER: PREV199598549828
TITLE: Disturbance of energy transduction in rat liver mitochondria by sanguinarine and APhMA.
AUTHOR(S): Belyaeva, T. N.; Faddeeva, M. D.
CORPORATE SOURCE: Inst. Cytol., Russ. Acad. Sci., St. Petersburg Russia
SOURCE: Tsitologiya, (1995) Vol. 37, No. 3, pp. 237-248. ISSN: 0041-3771.
DOCUMENT TYPE: Article
LANGUAGE: Russian
SUMMARY LANGUAGE: Russian; English

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L18	0	S	L4(W)L3(W)L6
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L22	6	S	L2 AND L9
L23	3	S	L2 AND L19
L24	7	S	L2 AND L20
L25	0	S	L7 AND L2 AND L19
L26	1	S	L7 AND L2 AND L20
L27	0	S	L8 AND L2 AND L20
L28	0	S	L8 AND L2 AND L19
L29	0	S	L1 AND L19
L30	1	S	L1 AND L20
L31	0	S	L7 AND L1 AND L19
L32	0	S	L7 AND L1 AND L20
L33	0	S	L8 AND L1 AND L20
L34	0	S	L8 AND L1 AND L19